

REMARKS

INTRODUCTION

In accordance with the foregoing, claims 1, 8 and 15 have been amended. Claims 1-15 are pending in the application. No new matter has been added.

CLAIM REJECTIONS – 35 U.S.C. § 102

Claims 1-5, 7-12, and 14 were rejected under 35 U.S.C. 102(b) as being anticipated by Wilkinson (U.S. Patent No. 2,338,154) (hereinafter "Wilkinson").

Claim 15 was rejected under 35 U.S.C. 102(b) as being anticipated by Schwraz (DE 196 04 643) (hereinafter "Schwarz").

Wilkinson discloses a fluid-cooled dynamo-electric machine. In Wilkinson, the yoke or field element of the machine is surrounded by an annular shell or cradle element provided at its inner periphery with spaced ribs 26 which extend axially. Wilkinson, page 2, column 2, lines 27-30. The radially inner periphery or edges of all or only certain spaced ones of the ribs 26 on the annular element are machined to provide a fairly close engagement or positioning of such ribs with respect to the outer periphery of the field yoke 15. Wilkinson, page 2, column 2, lines 66-71.

Schwarz discusses a linear motor where coolant flows through pipes in both the primary and the secondary. The pipes are in slots on the surface facing the air gap. Schwarz, English Abstract.

Claims 1-5 and 7

Amended claim 1 recites: "...a plate member having one surface supporting said cooling pipe and another surface uniformly conforming to the outer surface of the electric motor; fastening said plate member on the electric motor such that the other surface of the plate member abuts on the outer surface of the electric motor." Support for this amendment may be found on page three, in the eighth paragraph, of the specification of the present invention. In contrast to claim 1, Wilkinson discloses that the field element of the electric motor comes into contact with ribs formed around the inner periphery of the annular shell. Amended claim 1 recites that the other surface of the plate conforms to the outer surface of the motor. In

Wilkinson a series of ribs is in contact with the motor, not a uniform surface as in claim 1.

The cooling device of Wilkinson is provided in the cradle element that serves an outer casing of the electric motor. Wilkinson fails to discuss a plate member mounted on an outer surface of an electric motor by being fastened by fastening means. Further, the cooling device of Wilkinson includes a plurality of ribs or fins at an inner periphery thereof so as to cool inner space in the electric motor by air circulation. The cooling device is in contact with the armature yoke by the ribs formed at an inner periphery of the annular shell or cradle element 25. It is not expected to effectively conduct heat generated in the electric motor to the cooling device via circulating air which has low thermal conductivity, in contrast with the arrangement recited in claim 1 in which the generated heat is conducted through a plate member abutting on the electric motor in direct contact.

Claims 2-5 and 7 are dependent on claim 1 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 8-12 and 14

Claim 8 recites: "...a plate member having one surface supporting said cooling pipe and another surface uniformly conforming to the outer surface of the electric motor, and fastening means for fastening said plate member on the electric motor such that the other surface of the plate member abuts on the outer surface of the electric motor." Support for this amendment may be found on page three, in the eighth paragraph, of the specification of the present invention. In contrast to claim 8, Wilkinson discloses that the field element of the electric motor comes into contact with ribs formed around the inner periphery of the annular shell. Similar to the argument above, Claim 8 recites that the uniform surface of the plate, conforming to the outer surface of the motor, abuts the motor. Wilkinson discusses a series of ribs lying adjacent to the motor. An aspect of the present invention is to reduce the manufacturing processes needed to form an effective cooling structure as is accomplished in claim 8.

The cooling device of Wilkinson is provided in the cradle element that serves an outer casing of the electric motor. Wilkinson fails to discuss at least one cooling jacket, as is recited in claim 8, mounted on an outer surface of an electric motor by being fastened by fastening means. In Wilkinson, ribs are formed at an inner periphery so as to cool inner space in the electric

motor by air circulation. The cooling device of Wilkinson is in contact with the armature yoke by the ribs formed at an inner periphery of the cradle element. It is not expected to effectively conduct heat generated in the electric motor to the cooling device via circulating air which has low thermal conductivity, in contrast with the arrangement recited in claim 8 in which the generated heat is conducted through a plate member abutting on the electric motor in direct contact.

Claims 9-12 and 14 are dependent on claim 8 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claim 15

Amended claim 15 recites: "...a plurality of substantially flat plates, each plate having an outer surface supporting said cooling pipe and an inner surface abutting the outer surface of the motor." Support for this amendment may be found in at least Figure 5 of the present application.

In contrast to claim 15, Schwarz discusses only a single plate consistent with a linear motor. Amended claim 15 recites a plurality of flat plates.

Withdrawal of the foregoing rejection is requested.

CLAIM REJECTIONS – 35 U.S.C. § 103

Claims 6 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wilkinson in view of Taniguchi (JP Patent No. 9-201000 A) (hereinafter "Taniguchi").

Taniguchi discusses a refrigerant cooled rotating electric machine where a gap between the inner peripheral plate 3a of the jacket 3 and the frame 2 is filled up with liquid synthetic resin 4p mixed with an adhesive and aluminum powder. Taniguchi, English Abstract.

Claims 6 and 13 are dependent on claims 1 and 8, respectively and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: Gregory W. Harper
Gregory W. Harper
Registration No. 55,248

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501